

IN THE CLAIMS

1. (currently amended) A method for equalizing the pressures in a melting ~~the melting~~ chamber and in the cooling water system for an ingot mold/induction coil circuit of a special melting unit, ~~for example a pressure-electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system,~~ comprising:

comparing a in which the pressure of the cooling water ~~for the ingot mold/induction coil circuit~~ to a is compared to the pressure of the process gas in a in the melting chamber of the unit, wherein a characterized in that the pressure difference is maintained in a range from 0 to ~~+/-~~ +/- 0.5 bar;

feeding a process bar, whereby the gas from the melting chamber of the unit is first into ~~led to~~ an intermediate vessel containing hydraulic liquid, and only then supplying said is the hydraulic liquid ~~supplied to~~ one of the two chambers of a piston-type accumulator, whereby, corresponding to a pressure drop or pressure rise in one of the process gas or cooling water two media, counteraction is provided by adjusting at least one of the pressure of the process ~~discharging excess gas or the flow of by additional repumping of~~ cooling water, or vice versa, and determining the direction of the countereffect for a pressure drop or pressure rise is determined by the magnitude and rate of one of a the pressure drops or a pressure drop/pressure rise to equalize the pressures in the melting chamber and in the cooling system.

2. (currently amended) A device for equalizing the pressures in the melting chamber and in the cooling water system of a special melting unit comprising: unit, ~~for example a pressure-electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system, in which~~

a cooling water circuit;

a piston-type accumulator which is subdivided by a piston into a first and a second ~~two~~ variable-volume chamber in said ~~chambers is provided in the~~ cooling water circuit for an the ~~copper~~ ingot mold/induction coil, wherein the first ~~the one~~ chamber of said ~~the~~ piston-type accumulator is connected ~~being connected~~ via a pipe and control fittings to the said ~~the~~ cooling water circuit for the ingot mold/induction coil, to coil, ~~and~~ a heat exchanger; ~~exchanger,~~ one or more circulating pumps; ~~pumps,~~ and an additional high pressure water refill pump being ~~being~~ correspondingly provided in the said ~~the~~ cooling water circuit, wherein said second ~~characterized in~~ that the other ~~the other~~ chamber of the piston-type accumulator is connected via an additional pipe and a ~~control fitting and control fittings~~ to an intermediate vessel which is partially filled with a hydraulic liquid, wherein said ~~the~~ intermediate vessel is being ~~is~~ connected via an additional hydraulic line having with ~~with~~ control and shutoff fittings to the melting chamber, and at least one ~~chamber of the PESR unit or of the pressure induction furnace, and one or more pressure sensor~~ sensors being ~~being~~ respectively mounted in each of said pipes ~~the above referenced pipes,~~ whereby, corresponding to the design pressure of the unit, the piston-type accumulator is ~~accumulator~~ may be designed ~~as~~ a hydraulic cylinder with a continuous piston rod or as ~~as~~ a pneumatic cylinder with a magnetic piston, and the high pressure water refill pump is ~~pump may be designed~~ as a metering pump.

3. (previously presented) The device according to Claim 2, wherein the pipe between the vessel and the furnace hood above the liquid-filled chamber of the vessel leads into this vessel, and the piston-type accumulator is situated in a plane below the plane of the vessel.

4. (previously presented) A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and

cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.

5. (previously presented) A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.